Framework for Post-Closure Operation and Maintenance of RCRA Pond Gas Extraction and Treatment Systems

RCRA Ponds, FMC Facility, Pocatello, ID

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1.0 INTRODUCTION

FMC sent an email to EPA dated October 16, 2012 email transmitting its responses to EPA draft comments on the Framework for Post-Closure Phosphine Monitoring at the RCRA Ponds ("*Monitoring Framework*"). That email stated that FMC would proceed with drafting a framework for gas extraction and treatment at the RCRA Ponds that would provide the basis for developing a new Section 4, entitled Operation and Maintenance of RCRA Pond Gas Extraction and Treatment Systems, for inclusion in the amended RCRA Pond Post-Closure Plan (aPCP). This Framework for Post-Closure Operation and Maintenance of RCRA Pond Gas Extraction and Treatment Systems ("*Gas Extraction O&M Framework*") is being submitted to continue progress toward agreement on the aPCP.

2.0 BACKGROUND ON GAS EXTRACTION AND TREATMENT AT THE RCRA PONDS

Over the past five years, FMC has gained significant expertise in the design, assembly, operation and maintenance of gas extraction and treatment systems utilizing catalytic carbon adsorption, specifically using Calgon's Centaur™ technology for phosphine (PH3) treatment at the RCRA ponds. Although the size and point(s) of extraction (perimeter gas collection pipe outlets and/or temperature monitoring points [TMPs]) have been specific to each pond where gas extraction and treatment has been performed, the basic configuration of the system is the same: gas is extracted using a vacuum pump, the extracted gas is blended with dilution air to a target concentration of 300 ppm PH3, the diluted gas passes through a condensate liquid separator drum and then passes through two catalytic carbon adsorption drums in series. The systems have multiple temperature gauges, pressure gauges, flow meters and automatic system control interlocks that provide safeguards for the systems. A very brief summary of gas extraction and treatment at Ponds 15S, 16S, 17 and 18A is provided below.

POND 16S

The Gas Extraction and Treatment System (GETS) was designed to extract gas from the eight TMPs at Pond 16S. The GETS is a large-scale (using 5,400 pound [virgin] carbon absorption units) fixed system that was installed on Pond 16S and became operational on April 21, 2008. Prior to construction of the GETS, small (55-gallon, 225 pound [virgin] carbon absorption units) systems were used for gas extraction and treatment at Pond 16S perimeter pipe standpipes and TMPs. FMC conducted the final compliance demonstration sampling in November 2010. The GETS system has been idle since then, apart from monthly / bimonthly operation to perform TMP monitoring. Most of the time during gas extraction and treatment, the GETS was operated 24 hours per day, seven days per week ("24/7" operation), but was also safely and successfully operated 12 hours per day, seven days per week ("12/7" operation) for about 3 months from approximately January to March 2010 during the compliance demonstration period.

POND 15S

The pond gas extraction and treatment at Pond 15S involved the deployment of multiple small, 55-gallon carbon treatment units. Each gas extraction and treatment system (GES) unit is deployed and operated independently, but multiple GES units also were manifolded together to extract from single points of extraction at perimeter collection pipe outlets and TMPs. With the exception of additional instrumentation and fail-safe controls that were incorporated in the GES units based upon the Pond 16S GETS technology, the GES units are based on the same design as the GES (55-gallon) units that were utilized at Pond 16S. GES units were deployed at the Pond 15S TMPs and the east and west gas collection pipe outlets ("standpipes") during initial gas extraction in April 2010. Currently one GES unit is extracting gas from the east standpipe and two GES units are extracting gas from the southwest standpipe. Pond 15S attained the RCRA Pond UAO performance objective in April 2012 and the twelve month compliance demonstration period began in May 2012. To date, the GES units at Pond 15S have been operated on a 24/7 schedule.

POND 17

Four GES units began operating at Pond 17 in October 2010, one at each of four perimeter piping standpipes. Based upon operational measurements, Pond 17 achieved the RCRA Pond UAO performance objective target of 2,000 ppm PH3 in perimeter piping at the end of December 2010. During January 2011, operation of three of the four GES units ceased (and those units were moved to Pond 15S). The remaining GES unit was sufficient to maintain PH3 concentrations below 2,000 ppm in the perimeter piping. On December 14, 2011, the 12th continuous month of performance objective compliance monitoring was successfully completed. The remaining GES unit was shut off on December 15, 2011.

POND 18A

One GES unit began gas extraction and treatment at the east standpipe at Pond 18A on March 1, 2011. Operation of the GES unit at the east perimeter standpipe was suspended on October 5, 2011. That unit has remained on standby during the gas monitoring and evaluations conducted as part of the RCRA Pond UAO Phosphine Assessment Study.

3.0 CRITERIA FOR GAS EXTRACTION AND TREATMENT SYSTEM OPERATION

As stated in FMC's responses to the draft EPA comments on the Monitoring Framework and draft Section 3 of the aPCP, gas extraction and treatment will begin within 10 days at a RCRA pond(s) if (1) the perimeter gas collection pipe PH3 concentration is 14,000 ppm or greater as measured at the highest (if multiple) standpipe and/or (2) an inside appurtenance monitoring PH3 result is 35 ppm or greater.

As shown on Figure 4-1, if gas extraction and treatment is triggered by a perimeter gas collection pipe PH3 concentration of 14,000 ppm or greater, GES unit(s)will be deployed and initially operated to achieve a minimum monthly-averaged PH3 mass removal rate of 2.5 pounds per day (lb/day). If gas extraction and treatment is triggered by an inside appurtenance monitoring result of 35 ppm or greater, GES units will be deployed and initially operated to achieve a minimum monthly-averaged PH3 mass removal rate of 5 pounds per day (lb/day). Specific to Pond 16S, if gas extraction and treatment is triggered by a perimeter gas collection pipe PH3 concentration of 14,000 ppm or greater, then GES unit(s) will be deployed as described above or the GETS will initially be operated to achieve a minimum monthly-averaged PH3 mass removal rate of 15 lb/day. Again specific to Pond 16S, if gas extraction and treatment is triggered by an inside appurtenance monitoring result of 35 ppm or greater, GES unit(s) will be deployed as described above or the GETS system will initially be operated to achieve a minimum monthly-averaged PH3 mass removal rate of 30 lb/day. The operation of the GES unit(s) / GETS will be modified over time, based on monitoring data, to increase or decrease the monthly-averaged daily PH3 mass removal rate as described below and shown on Figure 4-1.

The GES operating data (calculated source gas PH3 concentration) will be utilized to evaluate the performance of the system and status of the pond for the purpose of the PH3 monitoring schedule pursuant to Table 3-1 in draft Section 3 of the aPCP. In the case of GETS operation at Pond 16S, the monthly perimeter pipe monitoring results will be utilized to evaluate the performance of the system and status of the pond for the purpose of the PH3 monitoring schedule. The appurtenance monitoring data also will be utilized to evaluate the performance of the GES unit or GETS system operation.

During GES unit(s) operation, an inside appurtenance re-monitoring (after maintenance) reading of $\geq$ 1 ppm will trigger increasing the monthly-averaged PH3 mass removal rate from the perimeter pipe by an additional 2.5 lb/day. The rate of PH3 removal from the perimeter pipe also will be increased by an additional monthly-averaged 2.5 lb/day if the monthly GES unit calculated source gas concentration is greater than 14,000 ppm for the fourth (4^{th}) month of GES unit operation. The rate of PH3 removal from the perimeter pipe will be increased by: (1) adding additional GES units extracting from the perimeter pipe outlet(s), (2) begin extraction at additional perimeter pipe outlets (if available), and/or (3) increasing the operating time of the current GES units. The GES unit(s) PH3 mass extraction rate will be increased by adding 2.5 lb/day (monthly-averaged) of extraction capacity, utilizing up to eight (8) GES units operating on a 24/7 schedule at a single pond. In the event a further increase in the mass removal rate is triggered, FMC will consult with EPA on options for any additional actions.

During GETS operation at Pond 16S, an inside appurtenance re-monitoring (after maintenance) reading of $\geq$ 1 ppm will trigger increasing the monthly-averaged PH3 mass removal rate by an additional 15 lb/day. The rate of PH3 by the GETS will also be increased

by an additional monthly-averaged 15 lb/day if the monthly perimeter gas extraction pipe monitoring PH3 concentration is greater than 14,000 ppm for the fourth (4^{th}) month of GETS unit operation. The rate of PH3 removal from the TMPs will be increased by expanding the operating time of the GETS system (e.g., by changing from 12/7 to 24/7 operation). The GETS PH3 mass extraction rate will be increased by adding 15 lb/day (monthly-averaged) of extraction capacity up to the GETS maximum sustained monthly-averaged mass removal rate of 60 lb/day (which requires 24/7 operation, 8,000 ppm PH3 combined source gas concentration and no significant flow restrictions). In the event a further increase in the mass removal rate is triggered, FMC will consult with EPA on options for any additional actions.

As the source gas PH3 concentrations stabilize and then decrease such that the average monthly GES unit calculated source gas PH3 concentration decreases below 10,000 ppm, the rate of PH3 removal from the perimeter pipe may be decreased by: (1) reducing the number of GES units extracting from the perimeter pipe outlet(s), (2) discontinuing extraction at additional perimeter pipe outlets (if available and extraction was in progress), or (3) reducing the operating time of the current GES units. In the case of GETS operation at Pond 16S, if the monthly perimeter pipe monitoring result is below 10,000 ppm, the GETS rate of PH3 removal may be decreased by reducing the GETS operating time (e.g., changing from 24/7 to 12/7 operation).

For ponds where gas extraction and treatment is in progress, the phosphine monitoring schedule pursuant to Figure 3-2 and Table 3-1 in draft Section 3 of the of the aPCP will be based on (1) the most recent month of perimeter pipe source gas concentration for GES unit extraction, as determined using the dilution box method per Section 6.1.2 below, and, for Pond 16S GETS operation, (2) the most recent month of perimeter pipe monitoring results. For ponds with multiple perimeter pipe standpipes, the perimeter pipe PH3 concentration will be recorded as the highest concentration measured among those standpipes.

When the monthly GES unit calculated source gas PH3 concentration decreases below 2,000 ppm, gas extraction and treatment will be discontinued. For GETS operation at Pond 16S, if the monthly perimeter pipe monitoring result is below 2,000 ppm, GETS operation will be discontinued. Both during and after GES / GETS operation, the phosphine monitoring program will continue pursuant to Figure 3-2 and Table 3-1 in draft Section 3 of the aPCP.

4.0 GAS EXTRACTION AND TREATMENT SYSTEM DESIGN

The gas extraction and treatment system at the RCRA Ponds, with the possible exception of Pond 16S, will involve the deployment of one or multiple GES unit(s). The gas extraction and treatment system at Pond 16S will be performed utilizing the GETS and/or deployment of one or multiple GES unit(s).

4.1 GES Unit Design and Deployment

There are currently eleven (11) GES units at the site (ten skid-mounted and one trailer-mounted unit). These GES units are all based on the same design. Gas from the perimeter gas collection piping is immediately blended with fresh air to achieve an inlet gas concentration of about 300 ppm PH3. The gas then passes through two carbon filter drums connected in series and is discharged to the atmosphere. Five temperature gauges, four pressure gauges, two flow meters, and portable PH3 gas monitors are used to monitor and control operating conditions. An automatic vacuum relief valve, two solenoid valves, a nitrogen fire suppression system, an internal alarm system, and an automatic system control interlock provide safeguards for the system.

The GES unit operating equipment list, specifications and schematic diagram are provided in the Interim Pond 15S (and Pond 17) Gas Extraction and Treatment Work Plan and those details will be included in a new Appendix A-6 GES Unit Operation and Maintenance Manual to the aPCP.

If gas extraction and treatment is triggered pursuant to Section 3 of the aPCP, one or more GES unit(s) will be deployed for operation at the triggered pond (except at Pond 16S where the GETS would likely be started up at least initially). The GES unit(s) will be connected to the perimeter gas collection pipe outlet(s) as necessary to meet the gas extraction and treatment criteria described in Section 3 of this Framework. The number of available perimeter pipe standpipes at each RCRA ponds is provided below:

- Pond 8S 1 perimeter pipe standpipe;
- Pond 8E has 1 perimeter pipe standpipe;
- Pond 9E has 1 perimeter pipe standpipe;
- Phase IV Ponds:
    - Pond 11S has 1 perimeter pipe standpipe
    - Pond 12S has 1 perimeter pipe standpipe
    - Pond 13S has 1 perimeter pipe standpipe
    - Pond 14S has 1 perimeter pipe standpipe;
- Pond 15S has 2 perimeter pipe standpipes;
- Pond 16S has 4 perimeter pipe standpipes;
- Pond 17 has 4 perimeter pipe standpipes; and
- Pond 18 Cell A has 2 perimeter pipe standpipes.

FMC anticipates that gas extraction and treatment from the perimeter pipe standpipe(s) will effectively control PH3 concentrations in the perimeter pipe and minimize or eliminate PH3 detection inside appurtenances. However, GES units may be deployed for extraction from TMPs if needed to accelerate reduction in the mass of PH3 beneath the pond cap and/or to meet the gas extraction criteria.

4.2 GETS Design

The Pond 16S GETS is the large-scale fixed gas extraction and treatment system that was installed and operated pursuant to the Pond 16S UAO. The Pond 16S GETS process schematic diagram, drawings showing the overall layout of the system, including the gas collection header, the compressed motive air system, and the gas treatment system, detailed drawing of the gas treatment system, including the gas condensate separator, the two carbon adsorption units, the mixing air blower, and the emergency shutdown nitrogen purge system, and detailed drawings depicting the piping, valving, instruments, and process units for the extraction system, gas headers, and the TMP wellheads are provided in the Pond 16S Final (100%) Design Analysis Report Addendum B. The GETS equipment list, specifications and schematic diagram and drawings will be modified as appropriate to eliminate the nitrogen injection system and the modifications for 12/7 operation and will be included in a new Appendix A-7 GETS Operation and Maintenance Manual to the aPCP.

5.0 GAS EXTRACTION AND TREATMENT OPERATION AND MAINTENANCE

The GES unit and GETS operation and maintenance procedures are summarized in Sections 5.1 and 5.2 respectively.

5.1 GES Unit Operation and Maintenance

The GES units will be operated and maintained following the procedures that have been safely and effectively followed over the past several years of GES operations at Ponds 15S, 17 and 18A. GES unit operation is summarized in Section 5.1.1 and maintenance procedures are summarized in Section 5.1.2 below.

5.1.1 GES Unit Operation

The GES unit operating procedures are provided in the Interim Pond 15S (and Pond 17) Gas Extraction and Treatment Work Plan and those details will be included in a new Appendix A-6 GES Unit Operation and Maintenance Manual to the aPCP.

5.1.2 GES Unit Maintenance

The eleven (11) GES units will be maintained in a fully functional condition to assure that one or more units can be deployed and operated within the required 10 day period if gas extraction and treatment is triggered. The GES units will receive a complete preventative maintenance (PM) check after deployment (i.e., after cessation of operation at a pond) or every 6 months of operation. The PM check will include:

- Carbon drums are disconnected and carbon emptied. Carbon will be disposed (if spent or stored (if not spent). (Based on past experience, condensation within the drums after use and then extended storage can negatively impact carbon performance);

- Inspect and clean the carbon drum(s) inlet gas diffuser baffle
- Inspect and clean the blower impeller;
- Inspect and clean the system piping;
- Inspect and clean thermocouples;
- Inspect and clean all pressure and flow gauges;
- Inspect and clean all valves (solenoid, needle, gate and ball);
- Inspect and clean (or replace) as needed all hoses and tubing; and
- Inspect and clean (or replace) as needed high temperature N2 purge system.

During GES unit operation, the following system inspection and maintenance will be performed at least 3 times per operating shift:

- Operational checks (per GES operating procedures) including system temperatures, pressures, flow rates and PH3 concentrations (inlet to 1st drum, inlet to 2nd drum and tailgas). Operators will note any potential or observed instrument malfunctions or failure.
- Check nitrogen purge system for adequate N2 supply (i.e., pressure).
- Check hoses for condensation build-up, particularly during winter operation.

In addition, the GES extraction hose and connections to the GES units (and header if multiple units) and standpipe will be inspected and monitored for potential air in-leakage and/or PH3 leakage weekly.

Additional details and a complete list of equipment (for PMs) will be included in a new Appendix A-6 GES Unit Operation and Maintenance Manual to the aPCP.

5.2 GETS Operation and Maintenance

The GETS will be operated and maintained following the procedures that were safely and effectively utilized after implementation of the Addendum B modifications, elimination of nitrogen injection and modifications for 12/7 operation. GETS unit operation is summarized in Section 5.2.1 and maintenance procedures are summarized in Section 5.2.2 below.

5.2.1 GETS Operation

The GETS will be operated following the procedures detailed in Pond 16S GETS Optimization and Operation Plan (October 2008) excluding the nitrogen injection system and/or FMC Pond 16S GETS Operation - Proposal to Implement Dayshift-Only Extraction and 12/7 Operator Coverage (November 2009). The GETS operating procedures will be included in a new Appendix A-7 GETS Operation and Maintenance Manual to the aPCP.

5.2.2 GETS Maintenance

The GETS will be maintained in a fully functional condition to assure operation can be initiated within the required 10 day period if gas extraction and treatment is triggered. The GETS units will receive a complete preventative maintenance (PM) check after operation (i.e. at shutdown after extended operation) and/or every 6 months during extended standby (i.e., if not used [for monitoring] within 6 months). The PM check will include:

GETS System

- Inspect and clean the blower impeller;
- Inspect and clean (or replace) air filters at the primary dilution air (headers) and secondary dilution air;
- Inspect and clean all thermocouple;
- Inspect and clean all pressure and flow gauges;
- Inspect and clean all valves (globe, solenoid, needle, gate and ball);
- Inspect and clean (or replace) as needed all hoses and tubing; and
- Inspect and clean (or replace) as needed N2 purge system.

TMP Extraction Systems

- Inspect and clean all thermocouples, pressure and flow gauges;
- Inspect and clean all valves (solenoid, needle, gate and ball); and
- Inspect and clean (or replace) as needed stainless steel tubing.

During GETS operation, the following system inspection and maintenance will be performed at least 3 times per operating shift:

- Operational checks (per GETS operating procedures) including system temperatures, pressures, flow rates and PH3 concentrations (at north and south headers, inlet to 1st absorber, inlet to 2nd absorber and tailgas). Operators will note any potential or observed instrument malfunctions or failure.
- Check nitrogen purge system for adequate N2 supply (i.e., pressure).
- Check TMP piping for condensation build-up, particularly during winter operation.

In addition, the GETS area and headers (north, south and combined) will be inspected and monitored for potential air in-leakage and/or PH3 leakage weekly.

Additional details and a complete list of equipment (for PMs) will be included in a new Appendix A-7 GETS Unit Operation and Maintenance Manual to the aPCP.

6.0 MONITORING AND REPORTING

The monitoring and reporting requirements during gas extraction and treatment for GES unit operation and GETS operation are summarized in Sections 6.1 and 6.2 respectively.

6.1 GES Unit Operation Monitoring and Reporting

Air monitoring at any RCRA Pond undergoing gas extraction and treatment will continue as specified in Section 3 (of the aPCP).

In addition to the air monitoring and reporting per Section 3 of the aPCP, GES operations monitoring and reporting will be performed as described below.

6.1.1 GES Unit Tailgas PH3 Monitoring

Each GES unit will be monitored to ensure that the tailgas (exhaust gas from the treatment system) remains below 0.3 ppm PH3. The tailgas will be monitored regularly for concentrations of PH3 with a hand-held Draeger Pac III meter (0 to 20 ppm range) or equivalent PH3 monitor. This will be performed by holding the PH3 meter sample inlet in the tailgas discharge stream at least three times per operating shift during operation of the GES. The tailgas PH3 concentration will be recorded on the operator logsheet immediately after each reading. This tailgas monitoring will be consistent with the procedures detailed in Section 2.3 of the *Pond 16S Monitoring and Reporting Plan – Revised October 2009* which will be incorporated in a new Appendix A-6 GES Unit Operation and Maintenance Manual to the aPCP.

6.1.2 Perimeter Piping Gas PH3 Monitoring

During GES operation, ongoing operational data from the GES will be collected and used to calculate and track the PH3 concentration in the perimeter piping. In addition, a sample of undiluted GES inlet gas will be measured once per month using the calibrated dilution manifold box method, a more precise measurement given the increased accuracy of the dilution box flow meters. The perimeter piping dilution manifold box method will be consistent with the procedure described in Section 2.9.2 of the Work Plan for the FMC Plant Operable Unit - Field Modification #15 - Appendix A - Field Sampling Plan – June 2010 which will be incorporated in a new Appendix A-6 GES Unit Operation and Maintenance Manual to the aPCP.

6.1.3 Reporting during GES Unit Operation

Operating and monitoring data will be maintained and evaluated to make decisions regarding system operation. Data collected will be included in a monthly report during GES operation.

The monthly status reports will be prepared and submitted to EPA. The monthly reports will include the following:

- Operational performance;
- Perimeter pipe (based on calculated GES unit source gas concentration and/or dilution box method) monitoring results;
- Summary of process operational parameters;
- Problems encountered and solutions proposed/implemented;
- Significant operational changes; and,
- Operational objectives during the upcoming month.

These reports will be submitted to EPA via email by the 15th day of the month following the reporting month, unless the 15th is a weekend or holiday in which case the report will be submitted on the following working day. The reporting requirements will be incorporated in a new Appendix A-6 GES Unit Operation and Maintenance Manual to the aPCP.

6.2 GETS Operation Monitoring and Reporting

Air monitoring at Pond 16S during GETS operation will continue as specified in Section 3 of the aPCP.

In addition to the air monitoring and reporting per Section 3 of the aPCP, GETS operation monitoring and reporting will be performed as described below.

6.2.1 GETS Tailgas PH3 Monitoring

The GETS tailgas will be monitored regularly for concentrations of PH3 with a hand-held Draeger Pac III meter (0 to 20 ppm range) or equivalent PH3 monitor. This will be performed by sampling the gas exiting the 2nd GETS adsorber at least three times per operating shift during operation of the GES. The tailgas PH3 concentration will be recorded on the operator logsheet immediately after each reading. This tailgas monitoring will be consistent with the procedures detailed in Section 2.3 of the Pond 16S Monitoring and Reporting Plan – Revised October 2009 which will be incorporated in a new Appendix A-7 GETS Operation and Maintenance Manual to the aPCP.

6.2.2 Perimeter Piping Gas PH3 Monitoring during GETS Operation

During GETS operation, the perimeter pipe outlets will be monitored monthly. The monthly perimeter pipe outlet monitoring will be performed following the procedures detailed in Section 3and Appendix A-5 Field Sampling Plan for RCRA Pond Gas Monitoring of the aPCP.

If a GES unit(s) is operated in conjunction with the GETS or without GETS operation, ongoing operational data from the GES will be collected and used to calculate and track the

PH3 concentration in the perimeter piping. In addition, a sample of GES inlet gas will be measured once per month using the calibrated dilution manifold box method, a more precise measurement given the increased accuracy of the dilution box flow meters. The perimeter piping dilution manifold box method will be consistent with the procedure described in Section 2.9.2 of the Work Plan for the FMC Plant Operable Unit - Field Modification #15 - Appendix A - Field Sampling Plan – June 2010 which will be incorporated in a new Appendix A-6 GES Unit Operation and Maintenance Manual to the aPCP.

6.2.3 Reporting during GETS Operation Reporting

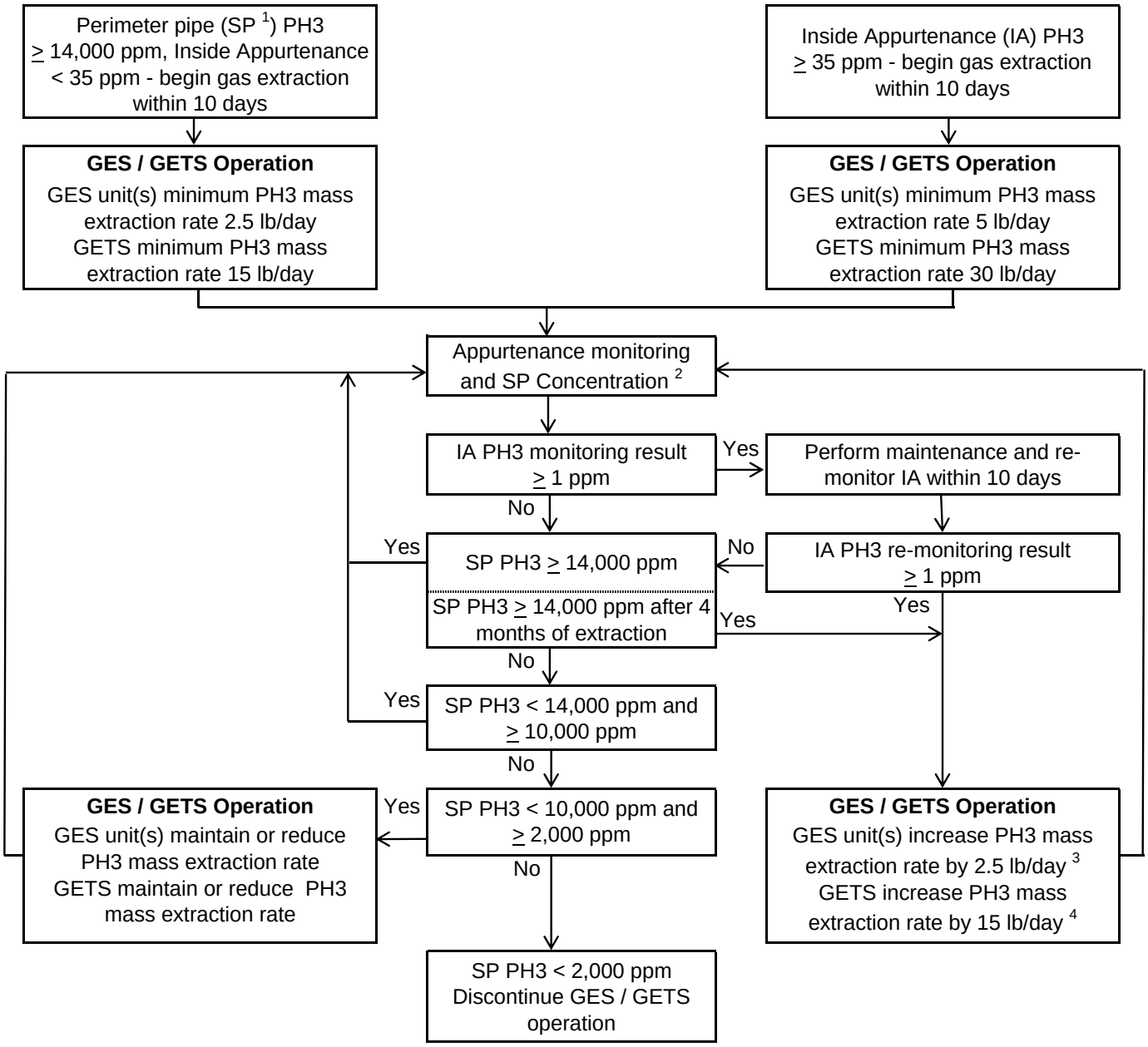
Operating and monitoring data will be maintained and evaluated to make decisions regarding system operation. Data collected will be included in a monthly report during GETS operation.

The monthly status reports will be prepared and submitted to EPA. The monthly reports will include the following:

- Operational performance;
- Perimeter pipe monitoring results and/or based on calculated GES unit source gas concentration if GES units are in operation at the Pond 16S perimeter pipe outlets;
- Summary of process operational parameters;
- Problems encountered and solutions proposed/implemented;
- Significant operational changes; and,
- Operational objectives during the upcoming month.

These reports will be submitted to EPA via email by the 15th day of the month following the reporting month, unless the 15th is a weekend or holiday in which case the report will be submitted on the following working day. The reporting requirements will be incorporated in a new Appendix A-7 GETS Operation and Maintenance Manual to the aPCP.

Figure 4-1 Decision Tree for GES / GETS Operation at RCRA Ponds



[1] The perimeter pipe standpipe (SP) phosphine monitoring result is based on highest PH3 concentration at perimeter pipe standpipe (SP) for ponds with multiple standpipes.

[2] For GES unit operation, the SP PH3 concentration will be based on the monthly average source gas concentration calculated from GES unit operating data. For GETS operation, the SP PH3 concentration will be based on monthly perimeter pipe monitoring results.

[3] Increasing the PH3 mass extraction rate will proceed by adding 2.5 pounds per day (lb/day) of extraction capacity up to a maximum of eight (8) GES units operating on a 24/7 schedule at a single pond. In the event a further increase in the mass removal rate is triggered, FMC will consult with EPA on options for any additional actions.

[4] Increasing the PH3 mass extraction rate will proceed by adding 15 pounds per day (lb/day) of extraction capacity up to the maximum sustained GETS mass removal rate of 60 lb/day (24/7 operation, 8,000 ppm PH3 combined source gas concentration and no significant flow restrictions). In the event a further increase in the mass removal rate is triggered, FMC will consult with EPA on options for any additional actions.